Hazus: Earthquake Global Risk Report

Region Name: Trinidadalt1

Earthquake Scenario: trinidadalt1ellbgeol_m7p46_se

Print Date: August 23, 2024

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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General Description of the Region

Hazus-MH is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 14 county(ies) from the following state(s):

California

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 41,675.54 square miles and contains 259 census tracts. There are over 376 thousand households in the region which has a total population of 955,750 peopleF. The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 421 thousand buildings in the region with a total building replacement value (excluding contents) of 207,966 (millions of dollars). Approximately 89.00 % of the buildings (and 62.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 41,839 and 58,347 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 421 thousand buildings in the region which have an aggregate total replacement value of 207,966 (millions of dollars) . Appendix B provides a general distribution of the building value by Total Region and County.

In terms of building construction types found in the region, wood frame construction makes up 78% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 43 hospitals in the region with a total bed capacity of 2,328 beds. There are 688 schools, 433 fire stations, 99 police stations and 15 emergency operation facilities. With respect to high potential loss facilities (HPL), there are no dams identified within the inventory. The inventory also includes no hazardous material sites, no military installations and no nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 100,186.00 (millions of dollars). This inventory includes over 3,615.76 miles of highways, 3,752 bridges, 123,631.70 miles of pipes.

Table 1: Transportation System Lifeline Inventory

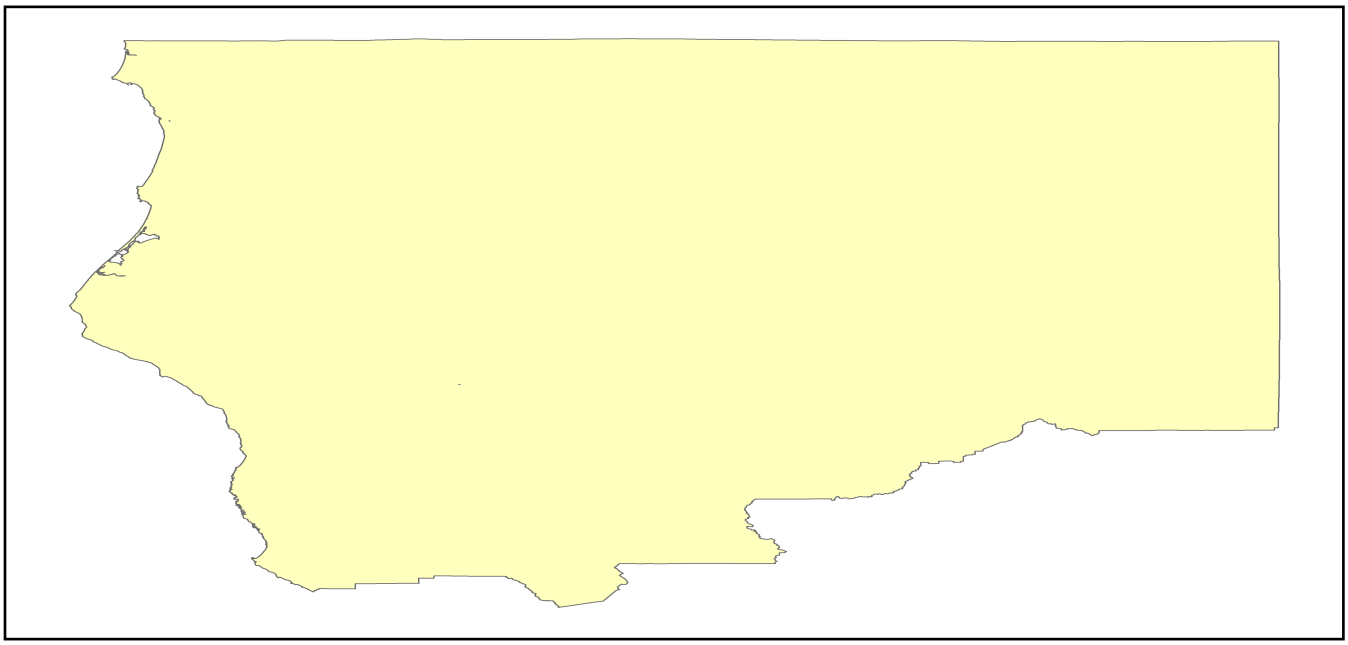
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	3,752	8235.0704
	Segments	871	24063.0711
	Tunnels	4	44.1578
		Subtotal	**32342.2993**
Railways	Bridges	656	3732.6400
	Facilities	3	7.9890
	Segments	694	4906.9547
	Tunnels	0	0.0000
		Subtotal	**8647.5837**
Light Rail	Bridges	0	0.0000
	Facilities	0	0.0000
	Segments	0	0.0000
	Tunnels	0	0.0000
		Subtotal	**0.0000**
Bus	Facilities	8	18.4019
		Subtotal	**18.4019**
Ferry	Facilities	0	0.0000
		Subtotal	**0.0000**
Port	Facilities	34	129.6027
		Subtotal	**129.6027**
Airport	Facilities	61	342.2982
	Runways	67	359.7438
		Subtotal	**702.0420**
		Total	**41,839.90**

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	2464.8717
	Facilities	6	235.7640
	Pipelines	0	0.0000
		Subtotal	**2700.6357**
Waste Water	Distribution Lines	NA	1478.9230
	Facilities	45	7737.8310
	Pipelines	0	0.0000
		Subtotal	**9216.7540**
Natural Gas	Distribution Lines	NA	985.9487
	Facilities	4	164.9741
	Pipelines	305	6256.9614
		Subtotal	**7407.8842**
Oil Systems	Facilities	1	0.1180
	Pipelines	0	0.0000
		Subtotal	**0.1180**
Electrical Power	Facilities	88	39008.2650
		Subtotal	**39008.2650**
Communication	Facilities	118	13.9240
		Subtotal	**13.9240**
		Total	**58,347.60**

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	trinidadalt1ellbgeol_m7p46_se
Type of Earthquake	User-defined
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	NA
Longitude of Epicenter	NA
Latitude of Epicenter	NA
Earthquake Magnitude	7.46
Depth (km)	NA
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	NA

Direct Earthquake Damage

Building Damage

Hazus estimates that about 4,614 buildings will be at least moderately damaged. This is over 1.00 % of the buildings in the region. There are an estimated 77 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage Categories by General Occupancy Type

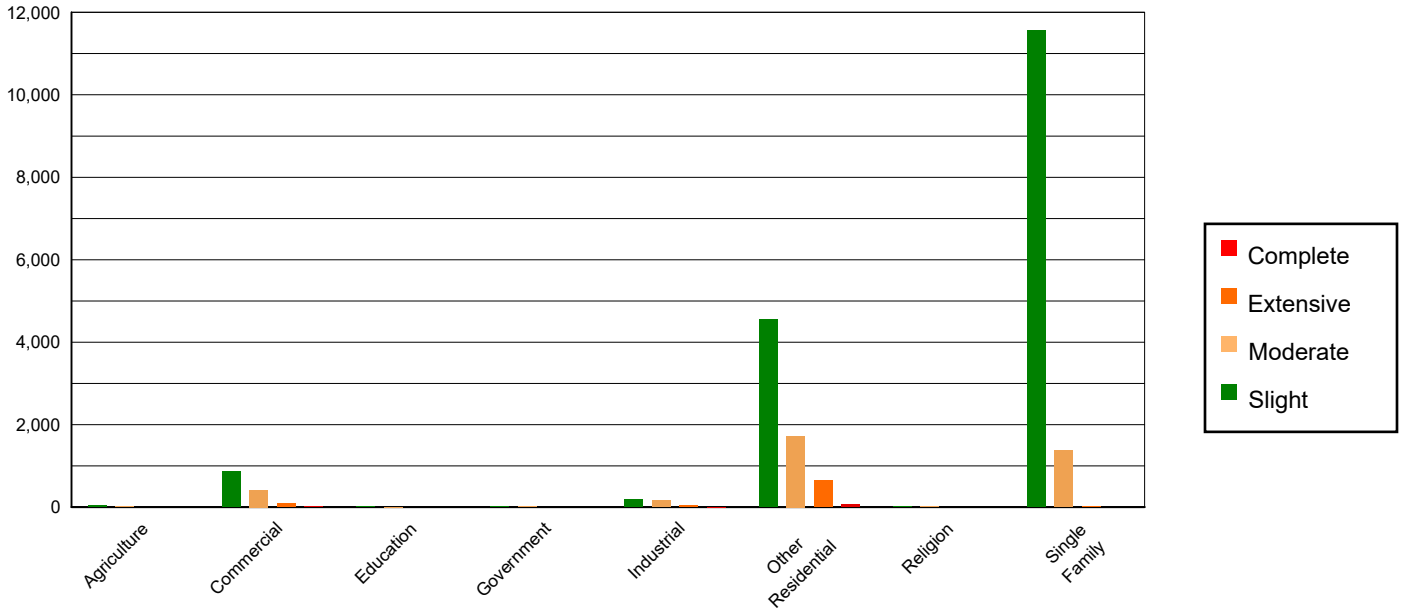


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	6898.17	1.73	39.77	0.23	15.74	0.42	1.31	0.16	0.01	0.02
Commercial	27826.94	6.96	862.75	4.99	416.52	11.19	100.00	12.28	11.78	15.26
Education	918.42	0.23	22.91	0.13	6.13	0.16	0.53	0.06	0.01	0.01
Government	983.90	0.25	19.25	0.11	9.79	0.26	2.78	0.34	0.29	0.37
Industrial	6026.34	1.51	194.94	1.13	164.44	4.42	49.32	6.06	5.96	7.72
Other Residential	92251.27	23.09	4547.67	26.33	1724.21	46.31	643.99	79.08	58.86	76.23
Religion	1602.01	0.40	20.95	0.12	8.90	0.24	1.09	0.13	0.06	0.07
Single Family	263078.58	65.84	11564.78	66.95	1377.08	36.99	15.31	1.88	0.26	0.33
Total	**399,586**		**17,273**		**3,723**		**814**		**77**	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	313398.17	78.43	14513.58	84.02	1746.06	46.90	22.60	2.78	0.46	0.59
Steel	9885.13	2.47	289.10	1.67	272.85	7.33	83.27	10.23	14.17	18.35
Concrete	10202.95	2.55	414.50	2.40	232.86	6.25	87.86	10.79	11.52	14.91
Precast	6348.20	1.59	184.58	1.07	121.54	3.26	17.65	2.17	1.01	1.31
RM	13089.63	3.28	333.60	1.93	153.32	4.12	12.99	1.59	0.13	0.17
URM	1259.25	0.32	55.48	0.32	72.51	1.95	26.18	3.21	5.22	6.76
MH	45402.29	11.36	1482.18	8.58	1123.67	30.18	563.79	69.23	44.71	57.90
Total	**399,586**		**17,273**		**3,723**		**814**		**77**	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 2,328 hospital beds available for use. On the day of the earthquake, the model estimates that only 2,030 hospital beds (87.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 95.00% of the beds will be back in service. By 30 days, 99.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	43	1	0	37
Schools	688	22	0	621
EOCs	15	0	0	15
PoliceStations	99	2	0	89
FireStations	433	5	0	417

Transportation Lifeline Damage

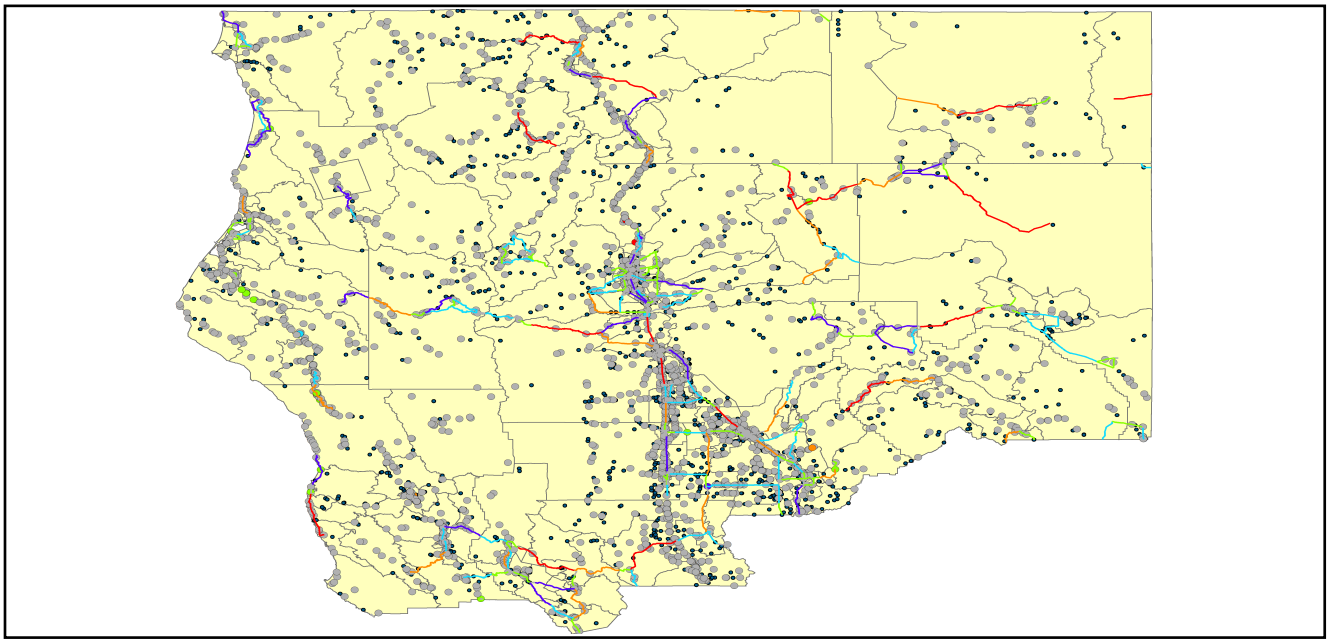


Table 6: Expected Damage to the Transportation Systems

System	Component		Number of Locations			
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	871	0	0	871	871
	Bridges	3,752	2	0	3,749	3,752
	Tunnels	4	0	0	4	4
Railways	Segments	694	0	0	694	694
	Bridges	656	0	0	656	656
	Tunnels	0	0	0	0	0
	Facilities	3	0	0	3	3
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	8	0	0	8	8
Ferry	Facilities	0	0	0	0	0
Port	Facilities	34	0	0	34	34
Airport	Facilities	61	0	0	61	61
	Runways	67	0	0	67	67

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	6	0	0	6	6
Waste Water	45	2	0	40	45
Natural Gas	4	0	0	4	4
Oil Systems	1	0	0	1	1
Electrical Power	88	3	0	87	87
Communication	118	4	0	118	118

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	76,580	2114	528
Waste Water	45,948	1062	265
Natural Gas	1,104	0	0
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	376,894	6,118	4,715	2,290	0	0
Electric Power		11,243	7,327	3,205	390	15

Induced Earthquake Damage

Fire Following Earthquake

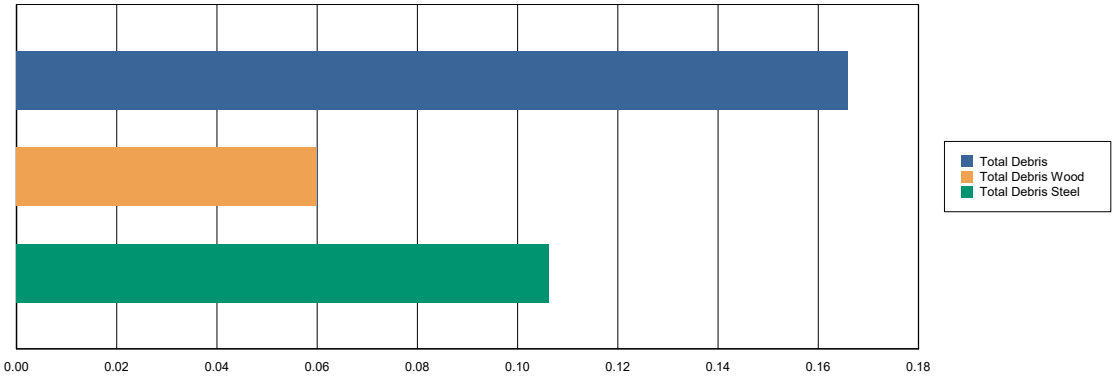
Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 0 ignitions that will burn about 0.00 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 0 people and burn about 0 (millions of dollars) of building value.

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 166,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 36.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 6,640 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Earthquake Debris (millions of tons)



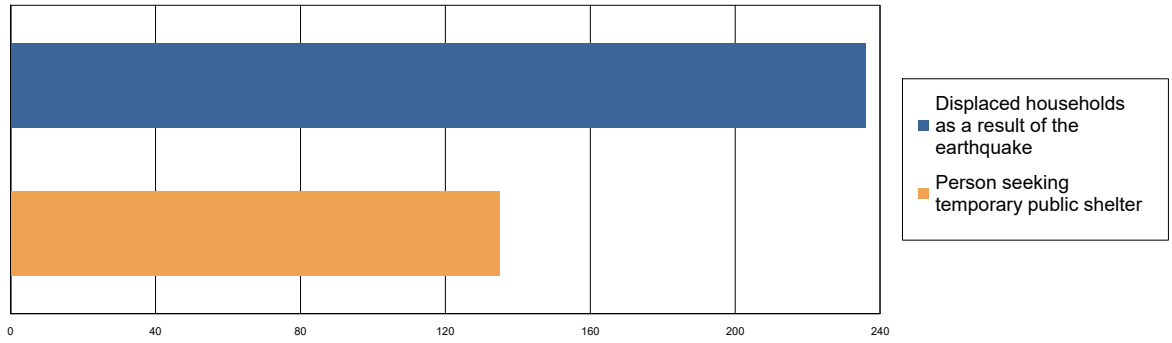
Brick/ Wood	Reinforced Concrete/Steel	Total Debris	Truck Load
0.06	0.11	0.17	6,640 (@25 tons/truck)

Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 236 households to be displaced due to the earthquake. Of these, 135 people (out of a total population of 955,750) will seek temporary shelter in public shelters.

Displaced Households/ Persons Seeking Short Term Public Shelter



Displaced households as a result of the earthquake	Persons seeking temporary public shelter
236	135

Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	0.39	0.06	0.01	0.01
	Commuting	0.02	0.02	0.04	0.01
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.02	0.00	0.00	0.00
	Industrial	0.57	0.09	0.01	0.02
	Other-Residential	40.06	5.52	0.39	0.72
	Single Family	23.03	1.03	0.00	0.00
	Total	**64**	**7**	**0**	**1**
2 PM	Commercial	31.44	4.82	0.48	0.93
	Commuting	0.16	0.21	0.35	0.07
	Educational	21.99	2.74	0.15	0.28
	Hotels	0.00	0.00	0.00	0.00
	Industrial	4.15	0.68	0.07	0.13
	Other-Residential	13.67	1.92	0.14	0.26
	Single Family	7.69	0.36	0.00	0.00
	Total	**79**	**11**	**1**	**2**
5 PM	Commercial	22.36	3.34	0.32	0.62
	Commuting	2.87	3.75	6.43	1.24
	Educational	7.34	0.89	0.04	0.07
	Hotels	0.01	0.00	0.00	0.00
	Industrial	2.59	0.43	0.04	0.08
	Other-Residential	14.66	2.06	0.15	0.28
	Single Family	8.42	0.39	0.00	0.00
	Total	**58**	**11**	**7**	**2**

Economic Loss

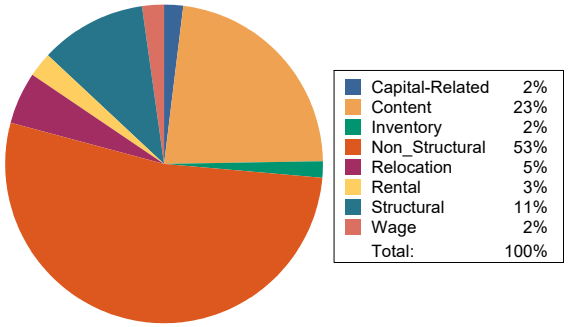
The total economic loss estimated for the earthquake is 1,736.05 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 1,208.48 (millions of dollars); 12 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 50 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type ($ millions)



Earthquake Losses by Occupancy Type ($ millions)

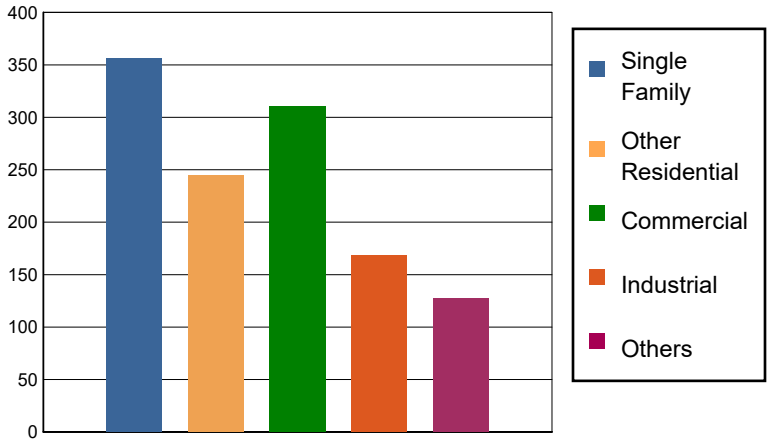


Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	2.8313	18.1568	3.2917	3.9891	28.2689
	Capital-Related	0.0000	1.2026	18.7080	2.0318	1.1924	23.1348
	Rental	3.6692	10.1355	14.1292	1.3827	1.9012	31.2178
	Relocation	11.4398	10.4375	18.5036	6.5971	16.1718	63.1498
	Subtotal	**15.1090**	**24.6069**	**69.4976**	**13.3033**	**23.2545**	**145.7713**
Capital Stock Losses							
	Structural	33.1222	23.9014	35.8356	24.1594	10.8769	127.8955
	Non_Structural	220.1708	155.2178	124.3002	72.9839	66.0830	638.7557
	Content	87.8493	41.2861	70.1205	51.0655	25.5951	275.9165
	Inventory	0.0000	0.0000	10.9315	7.2349	1.9702	20.1366
	Subtotal	**341.1423**	**220.4053**	**241.1878**	**155.4437**	**104.5252**	**1062.7043**
	Total	**356.25**	**245.01**	**310.69**	**168.75**	**127.78**	**1208.48**

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	24063.0711	0.0000	0.00
	Bridges	8235.0704	26.6683	0.32
	Tunnels	44.1578	0.0010	0.00
	Subtotal	**32342.2993**	**26.6693**	
Railways	Segments	4906.9547	0.0000	0.00
	Bridges	3732.6400	0.2011	0.01
	Tunnels	0.0000	0.0000	0.00
	Facilities	7.9890	0.0541	0.68
	Subtotal	**8647.5837**	**0.2552**	
Light Rail	Segments	0.0000	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Bus	Facilities	18.4019	1.3688	7.44
	Subtotal	**18.4019**	**1.3688**	
Ferry	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Port	Facilities	129.6027	13.0331	10.06
	Subtotal	**129.6027**	**13.0331**	
Airport	Facilities	342.2982	13.7511	4.02
	Runways	359.7438	0.0000	0.00
	Subtotal	**702.0420**	**13.7511**	
	Total	**41,839.93**	**55.08**	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	235.7640	0.0580	0.02
	Distribution Lines	2464.8717	9.5122	0.39
	Subtotal	**2700.6357**	**9.5702**	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	7737.8310	150.5868	1.95
	Distribution Lines	1478.9230	4.7782	0.32
	Subtotal	**9216.7540**	**155.3650**	
Natural Gas	Pipelines	6256.9614	0.0000	0.00
	Facilities	164.9741	0.0829	0.05
	Distribution Lines	985.9487	1.6370	0.17
	Subtotal	**7407.8842**	**1.7199**	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.1180	0.0000	0.00
	Subtotal	**0.1180**	**0.0000**	
Electrical Power	Facilities	39008.2650	305.1764	0.78
	Subtotal	**39008.2650**	**305.1764**	
Communication	Facilities	13.9240	0.6672	4.79
	Subtotal	**13.9240**	**0.6672**	
	Total	**58,347.58**	**472.50**	

Appendix A: County Listing for the Region

Butte,CA

Colusa,CA

Del Norte,CA

Glenn,CA

Humboldt,CA

Lake,CA

Lassen,CA

Mendocino,CA

Modoc,CA

Plumas,CA

Shasta,CA

Siskiyou,CA

Tehama,CA

Trinity,CA

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
California					
	Butte	211,632	25,875	16,639	42,514
	Colusa	21,839	2,244	2,024	4,268
	Del Norte	27,743	5,004	1,876	6,881
	Glenn	28,917	2,791	3,717	6,508
	Humboldt	136,463	19,361	8,683	28,044
	Lake	68,163	9,699	4,530	14,229
	Lassen	32,730	4,033	2,008	6,042
	Mendocino	91,601	14,237	8,510	22,748
	Modoc	8,700	1,435	1,468	2,904
	Plumas	19,790	6,128	2,276	8,405
	Shasta	182,155	21,572	15,715	37,288
	Siskiyou	44,076	6,856	4,758	11,615
	Tehama	65,829	7,705	5,113	12,818
	Trinity	16,112	2,209	1,485	3,694
Total Region		**955,750**	**129,149**	**78,802**	**207,958**

Trinidad (alt1)

Building Inspection Tagging (Counts)

Inspected		Restricted		Unsafe	
Residential	3.1K	Residential	659	Residential	59.1
Commercial	417	Commercial	100	Commercial	11.8
Industrial	164	Industrial	49.3	Industrial	5.96
Agricultural	15.7	Agricultural	1.31	Agricultural	0.0119
Educational	6.13	Educational	0.528	Educational	0.009
Government	9.79	Government	2.78	Government	0.285
Religious	8.9	Religious	1.09	Religious	0.0557

Total Economic Loss

Total: $1.21B

Top Counties	State	Total
Humboldt	CA	$1.14B
Del Norte	CA	$60.5M
Shasta	CA	$5.51M
Trinity	CA	$4.58M
Siskiyou	CA	$1.13M
Tehama	CA	$659K
Glenn	CA	$384K

Injuries & Fatalities

Total Day: 92.7
Total Night: 72

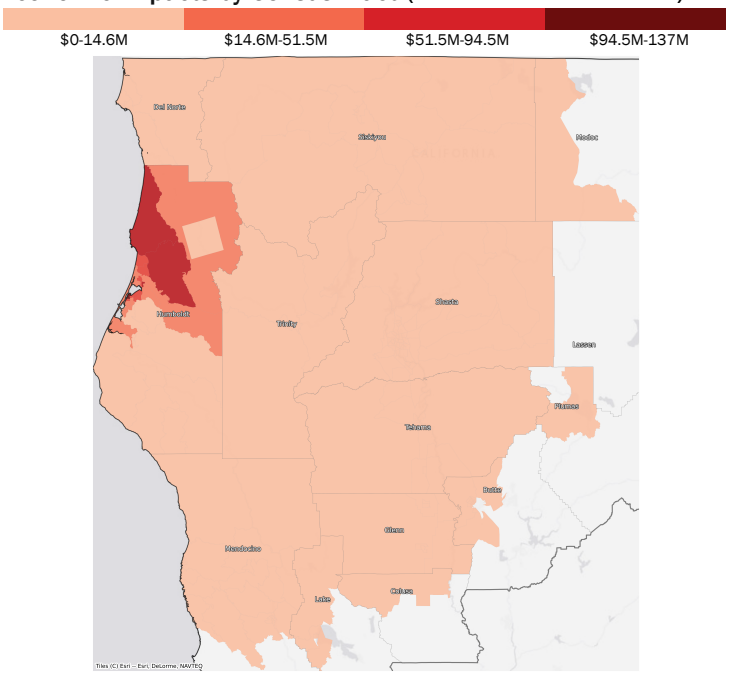
Top Counties	State	Injuries (day/night)	Fatalities (day/night)
Humboldt	CA	88.9/68.6	1.67/0.762
Del Norte	CA	1.94/2.35	0.000628/0.000111
Shasta	CA	0.0983/0.122	0.00001/0.000005
Trinity	CA	0.0858/0.115	0.00005/0.000005
Siskiyou	CA	0.0116/0.0135	0.000001/0
Glenn	CA	0.0103/0.00373	0.000003/0
Tehama	CA	0.00802/0.00832	0.000004/0.000002

Displaced Households & Short-Term Shelter Needs

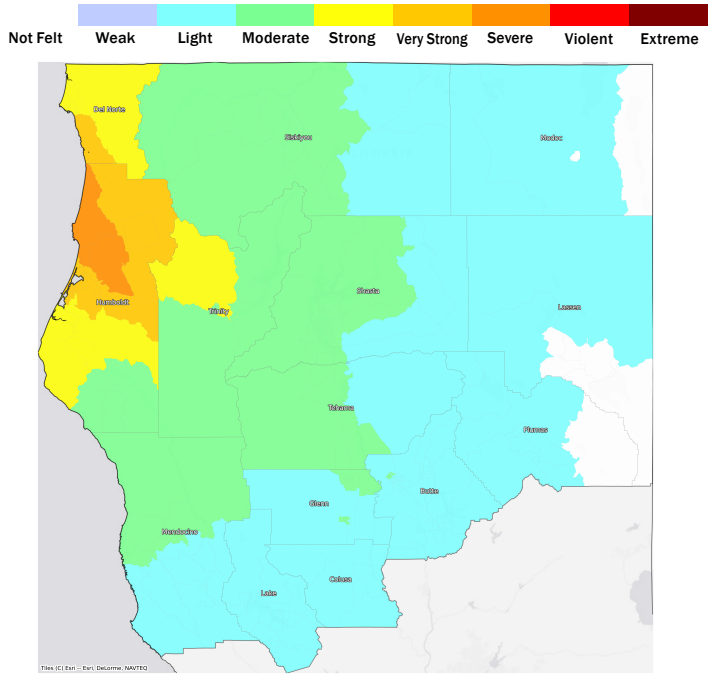
Total Displaced: 236
Total Needing Shelter: 136

Top Counties	State	Displaced	Needing Shelter
Humboldt	CA	236	135
Del Norte	CA	0.249	0.153
Trinity	CA	0.00927	0.00473
Butte	CA	0	0
Colusa	CA	0	0
Glenn	CA	0	0
Lake	CA	0	0

Economic Impacts by Census Tract (175 Tracts with Losses)



Ground Shaking



Debris

Total Tons: 167K
Total Truckloads: 6.68K

Type	Tons
Brick, Wood, and Other	60.1K
Concrete & Steel	107K

Trinidad (alt1)

Debris Generated by Census Tract

California Department of Conservation
California Geological Survey

Study Region: Trinidad (alt1)
Scenario: trinidadalt1ellbgeol_m7p46_se

Debris Generated *(in tons)*

- 0
- >0 - 100
- >100 - 1,000
- >1,000 - 10,000
- >10,000 - 46,500

Trinidad (alt1)

Displaced Households by Census Tract

California Department of Conservation
California Geological Survey

Study Region: Trinidad (alt1)
Scenario: trinidadalt1ellbgeol_m7p46_se

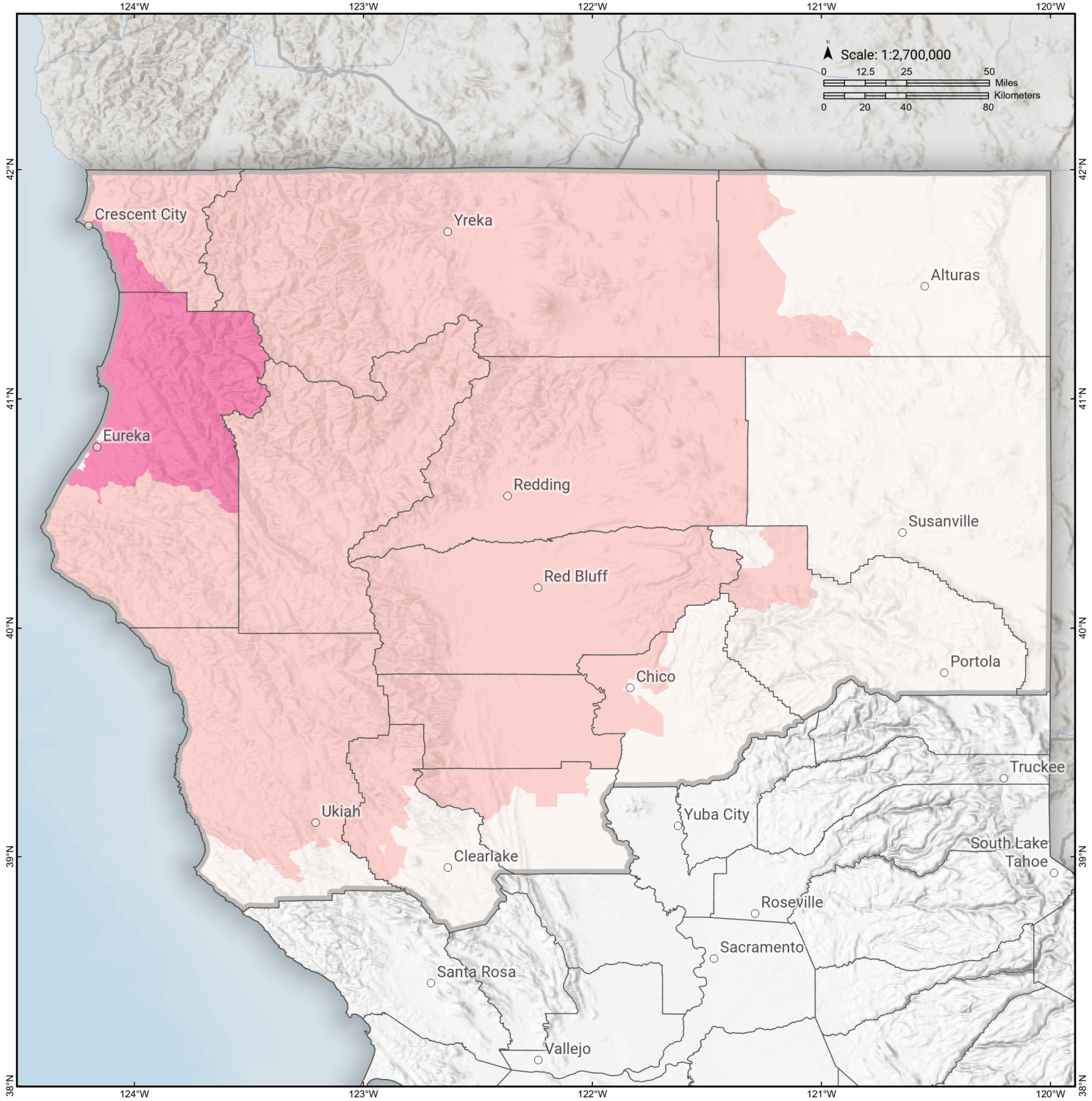
Displaced Households

- 0
- 1
- 2 - 40

Trinidad (alt1)

Loss Ratio by Census Tract

California Department of Conservation
California Geological Survey



Study Region: Trinidad (alt1)
Scenario: trinidadalt1ellbgeol_m7p46_se

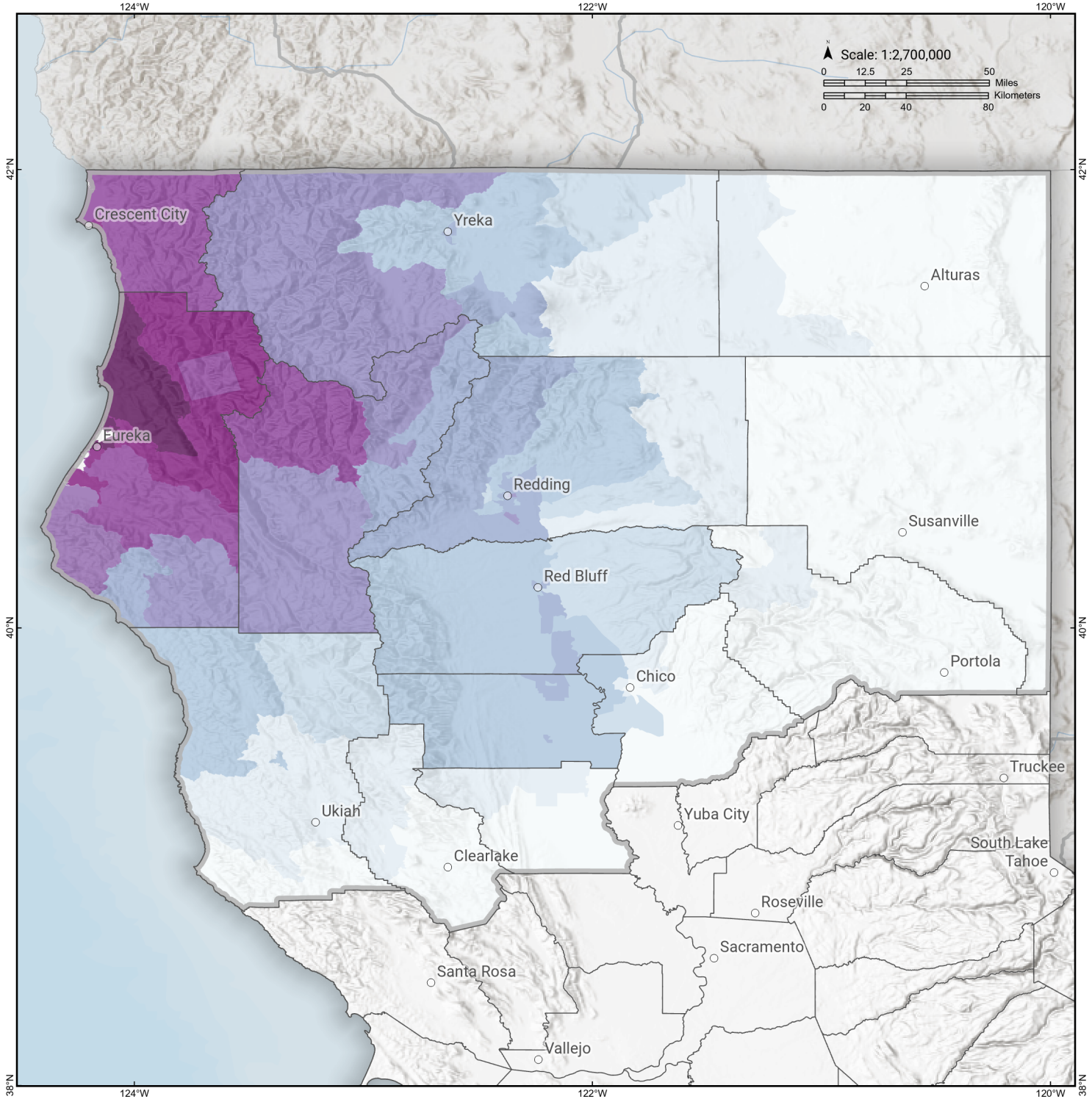
Loss Ratio *(ratio of building related economic loss to exposed value of buildings)*

- 0%
- >0 - 1%
- >1 - 13%

Trinidad (alt1)

Total Building Related Economic Loss by Census Tract

California Department of Conservation
California Geological Survey



Study Region: Trinidad (alt1)
Scenario: trinidadalt1ellbgeol_m7p46_se

Economic Loss *(in thousands of USD $)*

0	>250 - 1,000
>0 - 5	>1,000 - 3,000
>5 - 10	>3,000 - 10,000
>10 - 60	>10,000 - 30,000
>60 - 250	>30,000 - 137,300

Building Damage by Count by General Occupancy

RiskMAP
Increasing Resilience Together

August 22, 2024

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
California						
Butte						
Agriculture	510	0	0	0	0	510
Commercial	6,385	0	0	0	0	6,385
Education	172	0	0	0	0	172
Government	147	0	0	0	0	147
Industrial	1,522	0	0	0	0	1,522
Religion	531	0	0	0	0	531
Other Residential	21,498	0	0	0	0	21,498
Single Family	50,283	0	0	0	0	50,283
Colusa						
Agriculture	142	0	0	0	0	142
Commercial	794	0	0	0	0	794
Education	33	0	0	0	0	33
Government	32	0	0	0	0	32
Industrial	113	0	0	0	0	113
Religion	58	0	0	0	0	58
Other Residential	954	0	0	0	0	954
Single Family	5,954	0	0	0	0	5,954
Del Norte						

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
Agriculture	125	8	1	0	0	134
Commercial	659	62	8	0	0	729
Education	30	1	0	0	0	31
Government	16	1	0	0	0	18
Industrial	54	6	1	0	0	61
Religion	48	4	1	0	0	53
Other Residential	2,799	840	218	3	0	3,861
Single Family	5,641	468	8	0	0	6,117
Glenn						
Agriculture	1,364	1	0	0	0	1,365
Commercial	884	1	0	0	0	885
Education	35	0	0	0	0	35
Government	99	0	0	0	0	99
Industrial	254	0	0	0	0	254
Religion	89	0	0	0	0	89
Other Residential	2,150	2	0	0	0	2,152
Single Family	7,417	0	0	0	0	7,417
Humboldt						
Agriculture	106	28	14	1	0	150
Commercial	1,814	785	407	100	12	3,118
Education	99	22	6	1	0	127
Government	57	18	10	3	0	87
Industrial	336	186	163	49	6	740
Religion	35	16	8	1	0	61
Other Residential	6,302	3,560	1,496	641	59	12,058

		# of Buildings					
		None	Slight	Moderate	Extensive	Complete	Total
	Single Family	*25,945*	*11,030*	*1,369*	*15*	*0*	*38,359*
Lake							
	Agriculture	*161*	*0*	*0*	*0*	*0*	*161*
	Commercial	*2,091*	*0*	*0*	*0*	*0*	*2,091*
	Education	*68*	*0*	*0*	*0*	*0*	*68*
	Government	*78*	*0*	*0*	*0*	*0*	*78*
	Industrial	*354*	*0*	*0*	*0*	*0*	*354*
	Religion	*140*	*0*	*0*	*0*	*0*	*140*
	Other Residential	*14,601*	*0*	*0*	*0*	*0*	*14,601*
	Single Family	*21,633*	*0*	*0*	*0*	*0*	*21,633*
Lassen							
	Agriculture	*37*	*0*	*0*	*0*	*0*	*37*
	Commercial	*913*	*0*	*0*	*0*	*0*	*913*
	Education	*40*	*0*	*0*	*0*	*0*	*40*
	Government	*22*	*0*	*0*	*0*	*0*	*22*
	Industrial	*140*	*0*	*0*	*0*	*0*	*140*
	Religion	*71*	*0*	*0*	*0*	*0*	*71*
	Other Residential	*2,627*	*0*	*0*	*0*	*0*	*2,627*
	Single Family	*9,562*	*0*	*0*	*0*	*0*	*9,562*
Mendocino							
	Agriculture	*184*	*0*	*0*	*0*	*0*	*184*
	Commercial	*3,436*	*0*	*0*	*0*	*0*	*3,436*
	Education	*101*	*0*	*0*	*0*	*0*	*101*
	Government	*83*	*0*	*0*	*0*	*0*	*83*
	Industrial	*869*	*0*	*0*	*0*	*0*	*869*

		# of Buildings					
		None	Slight	Moderate	Extensive	Complete	Total
	Religion	*216*	*0*	*0*	*0*	*0*	*216*
	Other Residential	*7,059*	*1*	*0*	*0*	*0*	*7,060*
	Single Family	*25,969*	*0*	*0*	*0*	*0*	*25,969*
Modoc							
	Agriculture	*449*	*0*	*0*	*0*	*0*	*449*
	Commercial	*532*	*0*	*0*	*0*	*0*	*532*
	Education	*20*	*0*	*0*	*0*	*0*	*20*
	Government	*16*	*0*	*0*	*0*	*0*	*16*
	Industrial	*76*	*0*	*0*	*0*	*0*	*76*
	Religion	*36*	*0*	*0*	*0*	*0*	*36*
	Other Residential	*1,994*	*0*	*0*	*0*	*0*	*1,994*
	Single Family	*3,740*	*0*	*0*	*0*	*0*	*3,740*
Plumas							
	Agriculture	*84*	*0*	*0*	*0*	*0*	*84*
	Commercial	*1,215*	*0*	*0*	*0*	*0*	*1,215*
	Education	*26*	*0*	*0*	*0*	*0*	*26*
	Government	*45*	*0*	*0*	*0*	*0*	*45*
	Industrial	*184*	*0*	*0*	*0*	*0*	*184*
	Religion	*30*	*0*	*0*	*0*	*0*	*30*
	Other Residential	*5,032*	*0*	*0*	*0*	*0*	*5,032*
	Single Family	*9,877*	*0*	*0*	*0*	*0*	*9,877*
Shasta							
	Agriculture	*3,232*	*3*	*0*	*0*	*0*	*3,235*
	Commercial	*5,248*	*6*	*0*	*0*	*0*	*5,254*
	Education	*136*	*0*	*0*	*0*	*0*	*136*

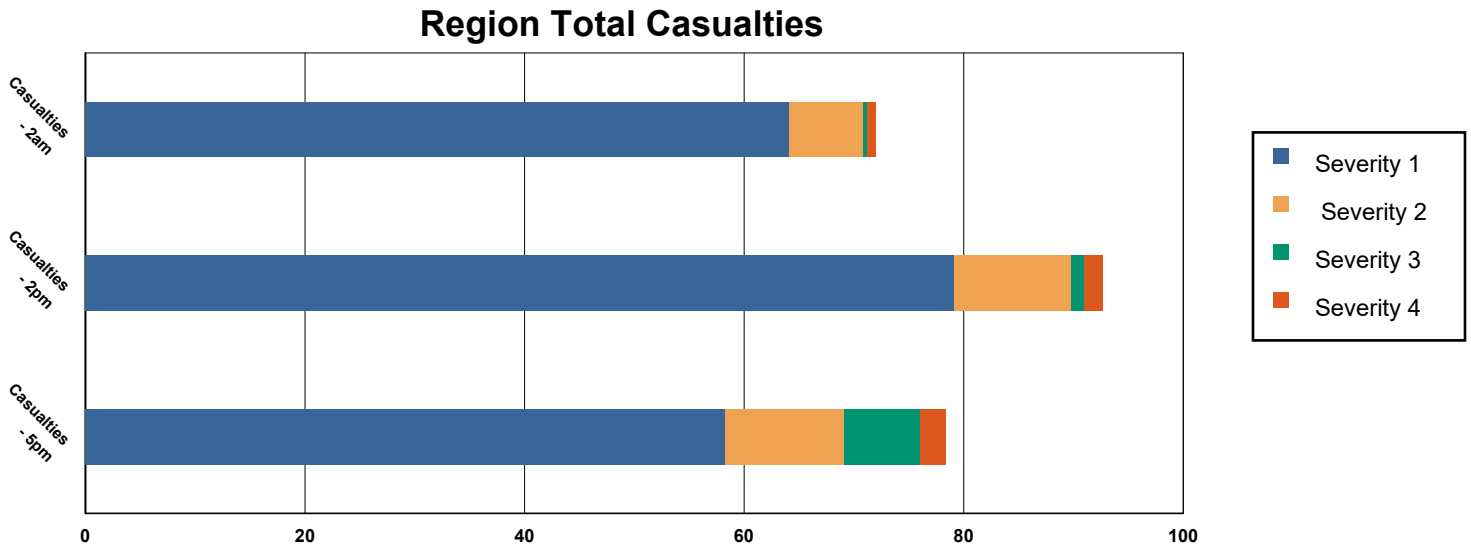
		# of Buildings					
		None	Slight	Moderate	Extensive	Complete	Total
	Government	*87*	*0*	*0*	*0*	*0*	*87*
	Industrial	*1,036*	*2*	*0*	*0*	*0*	*1,038*
	Religion	*66*	*0*	*0*	*0*	*0*	*66*
	Other Residential	*16,874*	*72*	*3*	*0*	*0*	*16,949*
	Single Family	*51,796*	*19*	*0*	*0*	*0*	*51,815*
Siskiyou							
	Agriculture	*201*	*0*	*0*	*0*	*0*	*201*
	Commercial	*1,590*	*1*	*0*	*0*	*0*	*1,591*
	Education	*76*	*0*	*0*	*0*	*0*	*76*
	Government	*244*	*0*	*0*	*0*	*0*	*244*
	Industrial	*480*	*0*	*0*	*0*	*0*	*480*
	Religion	*127*	*0*	*0*	*0*	*0*	*127*
	Other Residential	*5,083*	*11*	*0*	*0*	*0*	*5,095*
	Single Family	*17,792*	*2*	*0*	*0*	*0*	*17,794*
Tehama							
	Agriculture	*299*	*0*	*0*	*0*	*0*	*299*
	Commercial	*1,269*	*1*	*0*	*0*	*0*	*1,270*
	Education	*57*	*0*	*0*	*0*	*0*	*57*
	Government	*50*	*0*	*0*	*0*	*0*	*50*
	Industrial	*552*	*0*	*0*	*0*	*0*	*552*
	Religion	*110*	*0*	*0*	*0*	*0*	*110*
	Other Residential	*3,986*	*4*	*0*	*0*	*0*	*3,991*
	Single Family	*21,220*	*2*	*0*	*0*	*0*	*21,222*
Trinity							
	Agriculture	*4*	*0*	*0*	*0*	*0*	*4*

	# of Buildings					
	None	Slight	Moderate	Extensive	Complete	Total
Commercial	*997*	*8*	*1*	*0*	*0*	*1,005*
Education	*26*	*0*	*0*	*0*	*0*	*26*
Government	*8*	*0*	*0*	*0*	*0*	*8*
Industrial	*57*	*1*	*0*	*0*	*0*	*58*
Religion	*45*	*0*	*0*	*0*	*0*	*45*
Other Residential	*1,292*	*55*	*7*	*0*	*0*	*1,354*
Single Family	*6,250*	*44*	*0*	*0*	*0*	*6,294*
Total	**399,586**	**17,273**	**3,723**	**814**	**77**	**421,473**
Region Total	**399,586**	**17,273**	**3,723**	**814**	**77**	**421,473**

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Casualties Summary Report

August 23, 2024



	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Butte					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Butte					
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Colusa					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Del Norte					
Casualties - 2am					
Commuting	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Del Norte					
Casualties - 2am					
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	2	0	0	0	2
Single Family	1	0	0	0	1
Total Casualties - 2am	**2**	**0**	**0**	**0**	**2**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	1	0	0	0	1
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	1	0	0	0	1
Single Family	0	0	0	0	0
Total Casualties - 2pm	**2**	**0**	**0**	**0**	**2**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	1	0	0	0	1
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	1	0	0	0	1
Single Family	0	0	0	0	0
Total Casualties - 5pm	**1**	**0**	**0**	**0**	**2**
Glenn					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Glenn					
Casualties - 2pm					
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Humboldt					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	1	0	0	0	1
Other-Residential	38	5	0	1	45
Single Family	22	1	0	0	23
Total Casualties - 2am	**62**	**7**	**0**	**1**	**69**
Casualties - 2pm					
Commuting	0	0	0	0	1
Commercial	30	5	0	1	37
Educational	22	3	0	0	25
Hotels	0	0	0	0	0
Industrial	4	1	0	0	5
Other-Residential	13	2	0	0	15
Single Family	7	0	0	0	8
Total Casualties - 2pm	**77**	**11**	**1**	**2**	**91**
Casualties - 5pm					
Commuting	3	4	6	1	14
Commercial	22	3	0	1	26
Educational	7	1	0	0	8
Hotels	0	0	0	0	0
Industrial	3	0	0	0	3
Other-Residential	14	2	0	0	16
Single Family	8	0	0	0	9
Total Casualties - 5pm	**57**	**11**	**7**	**2**	**77**

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Lake					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Lassen					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Lassen					
Casualties - 2pm					
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Mendocino					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Mendocino					
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Modoc					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Plumas					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Plumas					
Casualties - 2pm					
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Shasta					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Shasta					
Casualties - 5pm					
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Siskiyou					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Tehama					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Tehama					
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Trinity					
Casualties - 2am					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2am	**0**	**0**	**0**	**0**	**0**
Casualties - 2pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 2pm	**0**	**0**	**0**	**0**	**0**
Casualties - 5pm					
Commuting	0	0	0	0	0
Commercial	0	0	0	0	0

	Injury Severity Level				
	Severity 1	Severity 2	Severity 3	Severity 4	Total
California					
Trinity					
Casualties - 5pm					
Educational	0	0	0	0	0
Hotels	0	0	0	0	0
Industrial	0	0	0	0	0
Other-Residential	0	0	0	0	0
Single Family	0	0	0	0	0
Total Casualties - 5pm	**0**	**0**	**0**	**0**	**0**
Region Total	NA	NA	NA	NA	NA

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Debris Summary Report

August 22, 2024

All values are in thousands of tons.

	Brick, Wood & Others	Concrete & Steel	Total
California			
Butte	0	0	0
Colusa	0	0	0
Del Norte	2	1	4
Glenn	0	0	0
Humboldt	57	106	163
Lake	0	0	0
Lassen	0	0	0
Mendocino	0	0	0
Modoc	0	0	0
Plumas	0	0	0
Shasta	0	0	0
Siskiyou	0	0	0
Tehama	0	0	0
Trinity	0	0	0
Total	**60**	**107**	**167**
Region Total	**60**	**107**	**167**

	Brick, Wood & Others	Concrete & Steel	Total

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Direct Economic Losses For Buildings

August 23, 2024

All values are in thousands of dollars

	Capital Stock Losses					Income Losses				
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss	Loss Ratio %	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
California										
Colusa	0	0	0	0	0.00	0	0	0	0	1
Mendocino	1	123	79	9	0.00	0	0	0	0	212
Shasta	172	3,195	1,770	287	0.01	17	19	20	30	5,510
Siskiyou	18	651	407	39	0.01	2	1	3	3	1,125
Trinity	193	2,589	1,516	172	0.08	40	16	10	41	4,577
Tehama	13	370	234	34	0.00	2	2	2	3	659
Plumas	0	0	0	0	0.00	0	0	0	0	0
Butte	1	37	27	5	0.00	0	0	0	0	70
Humboldt	123,767	595,177	254,275	19,058	2.56	62,056	22,779	27,917	30,415	1,135,443

Study Region : Trinidadalt1

Scenario : trinidadalt1ellbgeol_m7p46_se

	Capital Stock Losses					Income Losses				
	Cost Structural Damage	Cost Non-struct. Damage	Cost Contents Damage	Inventory Loss	Loss Ratio %	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
Del Norte	3,716	36,418	17,476	496	0.58	1,033	316	315	723	60,493
Glenn	14	195	134	36	0.00	1	1	1	2	384
Lassen	0	0	0	0	0.00	0	0	0	0	0
Lake	0	1	0	0	0.00	0	0	0	0	2
Modoc	0	0	0	0	0.00	0	0	0	0	1
Total	**127,896**	**638,756**	**275,917**	**20,137**	**0.23**	**63,150**	**23,135**	**28,269**	**31,218**	**1,208,477**
Region Total	**127,896**	**638,756**	**275,917**	**20,137**	**0.23**	**63,150**	**23,135**	**28,269**	**31,218**	**1,208,477**

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Direct Economic Loss For Transportation

August 23, 2024

All values are in thousands of dollars

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
California								
Butte								
Segments	0	0	0					0
Bridges	1	0	0					1
Tunnels	0	0	0					0
Facilities		3	0	0	0	0	140	143
Total	**1**	**3**	**0**	**0**	**0**	**0**	**140**	**143**
Colusa								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	6	6
Total	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**6**
Del Norte								
Segments	0	0	0					0
Bridges	1,079	0	0					1,079
Tunnels	1	0	0					1
Facilities		0	0	251	422	0	2,186	2,859

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Total	**1,080**	**0**	**0**	**251**	**422**	**0**	**2,186**	**3,938**
Glenn								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	4	0	102	106
Total	**0**	**0**	**0**	**0**	**4**	**0**	**102**	**107**
Humboldt								
Segments	0	0	0					0
Bridges	25,337	201	0					25,538
Tunnels	0	0	0					0
Facilities		0	0	1,026	12,570	0	8,718	22,315
Total	**25,337**	**201**	**0**	**1,026**	**12,570**	**0**	**8,718**	**47,853**
Lake								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	57	57
Total	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**57**
Lassen								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	6	6

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Total	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**6**
Mendocino								
Segments	0	0	0					0
Bridges	1	0	0					1
Tunnels	0	0	0					0
Facilities		0	0	48	37	0	164	249
Total	**1**	**0**	**0**	**48**	**37**	**0**	**164**	**249**
Modoc								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	11	11
Total	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**11**
Plumas								
Segments	0	0	0					0
Bridges	0	0	0					0
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	34	34
Total	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**34**
Shasta								
Segments	0	0	0					0
Bridges	8	0	0					8
Tunnels	0	0	0					0
Facilities		26	0	22	0	0	229	277

	Highway	Railway	Light Rail	Bus Facility	Ports	Ferries	Airport	Total
Total	**8**	**26**	**0**	**22**	**0**	**0**	**229**	**285**
Siskiyou								
Segments	0	0	0					0
Bridges	6	0	0					6
Tunnels	0	0	0					0
Facilities		26	0	22	0	0	524	571
Total	**6**	**26**	**0**	**22**	**0**	**0**	**524**	**578**
Tehama								
Segments	0	0	0					0
Bridges	16	0	0					16
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	102	102
Total	**16**	**0**	**0**	**0**	**0**	**0**	**102**	**118**
Trinity								
Segments	0	0	0					0
Bridges	220	0	0					220
Tunnels	0	0	0					0
Facilities		0	0	0	0	0	1,472	1,472
Total	**220**	**0**	**0**	**0**	**0**	**0**	**1,472**	**1,693**
Total	**26,669**	**255**	**0**	**1,369**	**13,033**	**0**	**13,751**	**55,078**
Region Total	**26,669**	**255**	**0**	**1,369**	**13,033**	**0**	**13,751**	**55,078**

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Direct Economic Loss For Utilities

August 23, 2024

All values are in thousands of dollars

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
California							
Butte							
Facilities	1	131	0	0	2,316	0	2,447
Pipelines	48	24	0	0			72
Total	49	155	0	0	2,316	0	2,520
Colusa							
Facilities	0	8	0	3	339	0	349
Pipelines	26	13	0	0			39
Total	26	21	0	3	339	0	389
Del Norte							
Facilities	0	8,304	0	0	0	63	8,368
Pipelines	362	182	0	0			544
Total	362	8,486	0	0	0	63	8,911
Glenn							
Facilities	0	123	0	0	2	0	125

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Pipelines	44	22	0	0			66
Total	44	145	0	0	2	0	191
Humboldt							
Facilities	0	139,921	0	0	155,987	596	296,503
Pipelines	8,129	4,083	0	0			12,212
Total	8,129	144,004	0	0	155,987	596	308,716
Lake							
Facilities	1	0	0	0	252	0	253
Pipelines	27	14	0	0			41
Total	29	14	0	0	252	0	294
Lassen							
Facilities	0	0	0	0	17	0	17
Pipelines	27	14	0	0			41
Total	27	14	0	0	17	0	57
Mendocino							
Facilities	0	617	0	0	256	2	875
Pipelines	131	66	0	0			197
Total	131	683	0	0	256	2	1,073
Modoc							
Facilities	0	0	0	3	0	0	3
Pipelines	31	16	0	0			47

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Total	31	16	0	3	0	0	49
Plumas							
Facilities	0	5	0	0	980	0	986
Pipelines	21	10	0	0			31
Total	21	15	0	0	980	0	1,016
Shasta							
Facilities	56	984	0	3	88,596	4	89,642
Pipelines	128	65	0	0			193
Total	185	1,048	0	3	88,596	4	89,835
Siskiyou							
Facilities	0	246	0	0	2,514	1	2,761
Pipelines	248	124	0	0			372
Total	248	370	0	0	2,514	1	3,133
Tehama							
Facilities	0	248	0	75	793	1	1,118
Pipelines	98	49	0	0			147
Total	98	298	0	75	793	1	1,265
Trinity							
Facilities	0	0	0	0	53,125	0	53,125
Pipelines	191	96	0	0			287
Total	191	96	0	0	53,125	0	53,412

	Potable Water	Waste Water	Oil Systems	Natural Gas	Electric Power	Communication	Total
Total	9,570	155,365	0	83	305,176	667	470,862
Region Total	9,570	155,365	0	83	305,176	667	470,862

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

Hazus Quick Assessment Report

Estimated Economic Loss ($ Billions)

Category	Description	Range
General Building Stock	Building Damage	0.40 - 1.50
	Building Contents	0.00 - 0.20
	Business Interruption	0.10 - 0.30
Infrastructure	Lifelines Damage	
	Total	0.60 - 2.40

Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	16,100	860	250	17,210
Minor	3,100	420	170	3,690
Major	660	100	60	820
Destroyed	60	10	< 10	70
Total	19,920	1,390	480	21,790

Estimated Casualties : Night Time

Severity Level	Description	# Persons
Level 1	Medical Aid	30 - 130
Level 2	Hospital Care	< 10
Level 3	Life-threatening	< 10
Level 4	Fatalities	< 10

Estimated Shelter Needs

Type	Households	People
Displaced Households	120 - 500	300 - 1,250
Public Shelter	50	140

Comments :

**Hazus damage estimates are presented using FEMA Preliminary Damage Assessment (PDA) categories. These estimates should be used for planning purposes and may not reflect actual observed damages from the PDA process.*

Disclaimer:

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, goetechnical, and observed ground motion data.

Earthquake Information

Location :

Origin Time:

Magnitude : 7.46

Epicenter Latitude/Longitude :

/

Depth & Type : /U

Name :
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

Population and Building Exposure

Population: 955,750

Building Exposure : ($ Millions)

Residential	129,157
Commercial	42,154
Other	36,654
Total	207,965

Counties : See Appendix

Major Metro Area :

Time of report: August 23, 2024 10:14 am

Hazus Quick Assessment Report

Estimated Economic Loss ($ Billions)

Category	Description	Range
General Building Stock	Building Damage	0.40 - 1.50
	Building Contents	0.00 - 0.20
	Business Interruption	0.10 - 0.30
Infrastructure	Lifelines Damage	
	Total	0.60 - 2.40

Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	16,100	860	250	17,210
Minor	3,100	420	170	3,690
Major	660	100	60	820
Destroyed	60	10	< 10	70
Total	19,920	1,390	480	21,790

Estimated Casualties : Day Time

Severity Level	Description	# Persons
Level 1	Medical Aid	40 - 160
Level 2	Hospital Care	10 - 20
Level 3	Life-threatening	< 10
Level 4	Fatalities	< 10

Estimated Shelter Needs

Type	Households	People
Displaced Households	120 - 500	300 - 1,250
Public Shelter	50	140

Comments :

**Hazus damage estimates are presented using FEMA Preliminary Damage Assessment (PDA) categories. These estimates should be used for planning purposes and may not reflect actual observed damages from the PDA process.*

Disclaimer:

The estimates of social and economic impacts contained in this report were produced using HAZUS loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, goetechnical, and observed ground motion data.

Earthquake Information

Location :

Origin Time:

Magnitude : 7.46

Epicenter Latitude/Longitude :

/

Depth & Type : /U

Name :
NA

Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

Population and Building Exposure

Population: 955,750

Building Exposure : ($ Millions)

Residential	129,157
Commercial	42,154
Other	36,654
Total	207,965

Counties : See Appendix

Major Metro Area :

Time of report: August 23, 2024 10:16 am

Hazus Quick Assessment Report

Estimated Economic Loss ($ Billions)

Category	Description	Range
General Building Stock	Building Damage	0.40 - 1.50
	Building Contents	0.00 - 0.20
	Business Interruption	0.10 - 0.30
Infrastructure	Lifelines Damage	
	Total	0.60 - 2.40

Preliminary Damage Assessment (PDA) Estimates

Description	Residential	Commercial	Other	Total
Affected	16,100	860	250	17,210
Minor	3,100	420	170	3,690
Major	660	100	60	820
Destroyed	60	10	< 10	70
Total	19,920	1,390	480	21,790

Estimated Casualties : Commute Time

Severity Level	Description	# Persons
Level 1	Medical Aid	30 - 120
Level 2	Hospital Care	10 - 20
Level 3	Life-threatening	< 10
Level 4	Fatalities	< 10

Estimated Shelter Needs

Type	Households	People
Displaced Households	120 - 500	300 - 1,250
Public Shelter	50	140

Comments :

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Earthquake Information

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Name :
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Ground Motion /Attenuation :

Maximum PGA: 1.00

Information Sources:

Comments :

Population and Building Exposure

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Other	36,654
Total	207,965

Counties : See Appendix

Major Metro Area :

Time of report: August 23, 2024 10:17 am

HAZUS™

FEMA

RiskMAP
Increasing Resilience Together

Shelter Summary Report

August 23, 2024

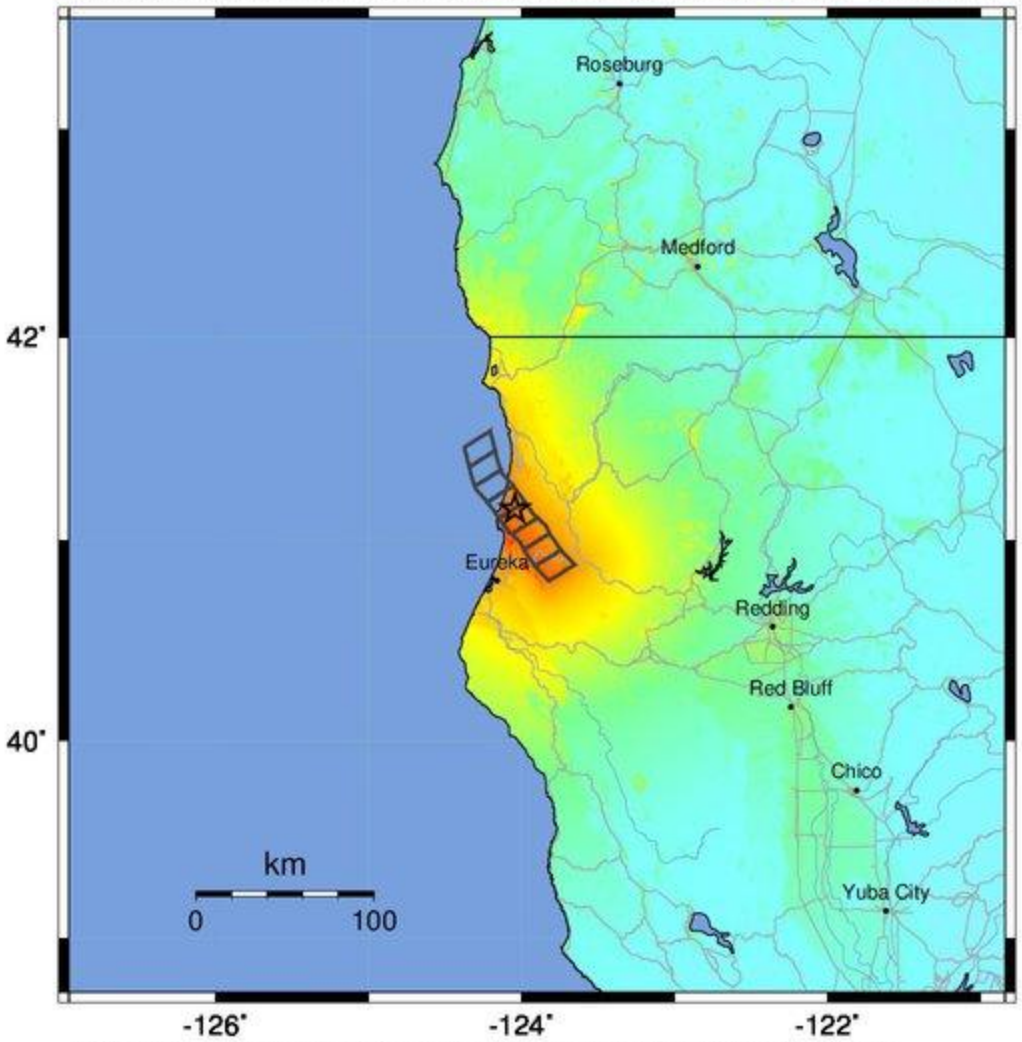
	# of Displaced Households	# of People Needing Short Term Shelter
California		
Butte	0	0
Colusa	0	0
Del Norte	0	0
Glenn	0	0
Humboldt	236	135
Lake	0	0
Lassen	0	0
Mendocino	0	0
Modoc	0	0
Plumas	0	0
Shasta	0	0
Siskiyou	0	0
Tehama	0	0
Trinity	0	0
Total	**236**	**136**
Region Total	**236**	**136**

Totals only reflect data for those census tracts/blocks included in the user's study region and will reflect the entire county/state only if all of the census blocks for that county/states were selected at the time of study region creation.

-- Earthquake Planning Scenario --

ShakeMap for Trinidad (alt1) - Median ground motions Scenario

Scenario Date: May 16, 2017 08:31:48 AM MDT M 7.5 N41.15 W124.04 Depth: 8.3km



PLANNING SCENARIO ONLY -- Map Version 11 Processed 2017-05-17 12:06:09 PM MDT

PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<0.05	0.3	2.8	6.2	12	22	40	75	>139
PEAK VEL.(cm/s)	*<0.02*	*0.1*	*1.4*	*4.7*	*9.6*	*20*	*41*	*86*	*>178*
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based upon Worden et al. (2012)